

Dennis M. McQuillan
New Mexico Environment Department
Liquid Waste Program
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EDUCATION

University of New Mexico: Bachelor of Science; Geology, 1978; distributed minor in chemistry, mathematics and physics

Short Courses: groundwater chemistry and contamination; aqueous geochemistry; organic geochemistry; news media interaction; fate and transport of organic contaminants in groundwater; OSHA 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) forty-hour and eight-hour supervisor certification; dispute resolution; soil physics; natural attenuation; management by objectives; management by responsibility; basic supervision; documenting discipline; septic tank inspection; Incident Command System; environmental justice; defensive driving; Red Cross first aid and CPR/AED

WORK EXPERIENCE

New Mexico Environment Department: March 1979 to June 2005 and October 2005 to present; Environmental Scientist, Water Resource Specialist, Geologist, Health Program Manager, Natural Science Manager

Consultant, Educator and Freelance Writer: 1987 to 2005; Sites in Arizona, Colorado, New Mexico, Ireland, Nova Scotia, Scotland and Wales

DUTIES AND ACCOMPLISHMENTS

Surveillance, Investigation, Incident Response: regional ground-water quality surveillance and mapping; 200+ site investigations; spill response; emergency response within Incident Command System/Unified Command.

Negotiation, Design and Oversight of Corrective Actions: public sewer and/or safe drinking water service provided to 27 communities; 59 source control/removal actions; 24 free-product recovery systems; 27 aquifer pump-and-treat systems; 9 sparge-and-vent systems; treatment systems on 5 contaminated public supply wells.

Research: ground-water quality and public health; effect of septic-tank lot size on ground-water nitrate; laboratory and in-situ biodegradation; natural attenuation of nitrate, gasoline, chlorinated solvents and high explosives; natural and anthropogenic sources of perchlorate; pharmaceutical residues in ground and surface water; stable isotope geochemistry of ground-water pollution; natural uranium in the Espanola Basin.

Program Development: creation of the "Water Fair" free well-testing program; promulgation and revision of numerical and narrative water-quality standards; development of comprehensive regulations to address water pollution; design and implementation of databases and enterprise Geographic Information System; development of regulations to allow beneficial reuse of domestic gray water; development of a program to eliminate substandard onsite wastewater systems owned by indigent households.

Management and Supervision: hiring, training, supervision and mentoring of staff; preparation of job hazard analyses; development and implementation of hazard communication and safety plans; management of program budgets; acquisition and management of state and federal grants and appropriations; job hazard analysis; program audits to identify and correct inconsistencies.

Stakeholder Outreach and Involvement: negotiated rulemaking committees; training and technical assistance to the regulated community and general public; guest lectures and seminars at state universities; public presentations; conference papers; news media interviews.

Expert Testimony: U.S. Congress; N.M. State Legislature; N.M. District Courts; Federal District Court; N.M. Environmental Improvement Board; N.M. Water Quality Control Commission; Judicially qualified as an expert in the investigation and remediation of soil and groundwater contamination.

EQUIPMENT USED

Water Testing Instruments: pH meters; conductivity/temperature/salinity/dissolved oxygen meters; ion-specific electrodes; colorimeters; spectrophotometers.

Vapor Testing Instruments: flame ionization detectors; photo-ionization detectors; combustible gas and O₂ meters.

Radiation Detection Instruments: Hand-held alpha, beta, gamma and x-ray monitor; gamma scintillometer.

Other Equipment: water level/free petroleum product sounders; continuous water-level recorders; pressure transducers; portable well pumps; electromagnetic induction (terrain conductivity) meter; hollow-stem auger.

PUBLICATIONS THAT ADDRESS ONSITE WASTEWATER SYSTEMS

McQuillan, D. and J. Vincent. 2012. Vulnerability Factors for Groundwater Contamination from Onsite Wastewater Systems. Proceedings, 11th Annual Espanola Basin Workshop, Santa Fe, New Mexico, May 15-16, 2012, <http://geoinfo.nmt.edu/ebtag/workshop/abstracts/preview.cfm?aid=28>

McQuillan, D., B. Linhoff, P. Longmire, M. Rearick, R. Gallegos, K. Torres, S. Wiman, M. Sanchez and A. King. 2011. Private Domestic Well Testing in the Santa Fe Region. New Mexico Bureau of Geology and Mineral Resources, Open File Report 536, p. 16, http://geoinfo.nmt.edu/publications/openfile/downloads/OFR500-599/526-550/536/ofr_536.pdf

McQuillan, D. and E. Bassett. 2009. Return Flow to Ground Water From Onsite Wastewater Systems. Proceedings, National Onsite Wastewater Recycling Association, 18th Annual Technical Conference and Expo, April 6-9, 2009, Milwaukee, WI, <http://www.nmenv.state.nm.us/fod/liquidwaste/documents/McQuillanandBassettNOWRA09.pdf>.

McQuillan, D. 2007. Effect of Lot Size, Depth to Ground Water, and Geology on Nitrate Contamination from On-Site Septic Systems. Proceedings, National Ground Water Association, 2007 Annual Ground Water Summit, Albuquerque, New Mexico, April 29-May 3, 2007, <http://ngwa.confex.com/ngwa/2007gws/techprogram/P4081.HTM>.

McQuillan, D. and S. Misseri. 2007. Ground Water Quality Impacts of Septic Tank Effluent in Anoxic Conditions. Proceedings, National Ground Water Association, 2007 Annual Ground Water Summit, Albuquerque, New Mexico, April 29-May 3, 2007, <http://ngwa.confex.com/ngwa/2007gws/techprogram/P3916.HTM>.

McQuillan, D. and M. Delgado. 2007. On-Site Wastewater Management in the Espanola Basin. Proceedings, 6th Annual Espanola Basin Workshop, Santa Fe, New Mexico, March 6-7, 2007, p. 15, http://geoinfo.nmt.edu/publications/openfile/downloads/OFR500-599/500-525/508/ofr_508.pdf.

McQuillan, D. 2006. Ground-Water Contamination by Septic Tank Effluents. Proceedings, 51st Annual New Mexico Water Conference, Albuquerque, New Mexico, October 3-4, 2006, <http://wrrri.nmsu.edu/publish/watcon/proc51/proc51.html>.

McQuillan, D. 2004. Ground-Water Quality Impacts from Onsite Septic Systems. 2004. Proceedings, National Onsite Wastewater Recycling Association, 13th Annual Technical Education Conference, Albuquerque, New Mexico, November 7-10, 2004, <http://www.nmenv.state.nm.us/fod/LiquidWaste/NOWRA.paper.pdf>.

McQuillan, D., B. Schall and B. Kitay. 2004. Ground-Water Pollution by Septic Tanks in the Espanola Basin. Proceedings, 3rd Annual Espanola Basin Workshop, Santa Fe, New Mexico, March 2-3, 2004. U.S. Geological Survey Open File Report 2004-1093, p. 8, <http://pubs.usgs.gov/of/2004/1093/>.

McQuillan, D., J. Parker, T. Chapman, K. Sherrell and D. Mills. 2001. Drug Residues in Ambient Water: Initial Surveillance in New Mexico, USA. Proceedings, 2nd International Conference on Pharmaceuticals and Endocrine Disrupting Chemicals in Water, Minneapolis, Minnesota, October 9-11, 2001, pp. 26-35, <http://www.ngwa.org/gwol/012572645.aspx>.

McQuillan, D., A. Richards and J. Parker. 2000. Ground Water: New Mexico's Buried Treasure. Environment Department (NMED) Open-File Report.

McQuillan, D. and J. Parker. 2000. Ground-Water Contamination and Remediation in New Mexico: 1927-2000. NMED Open-File Report.

McQuillan, D. and R. Montes. 1998. Ground-Water Geochemistry, Pojoaque Pueblo, New Mexico. NMED Open-File Report NMED/GWB-98/1, 34 p.

McQuillan, D. and M. Space. 1995. High Ground-Water Nitrate in Tijeras Arroyo, Hells Canyon and Abo Arroyo: Evidence for a Natural Geologic Origin. *New Mexico Geology*, vol. 17, no. 2.

Space, M.L., D.M. McQuillan and W.S. McDonald. 1993. Nitrate Contamination in Ground Water Along the Tijeras and Hells Canyon Watersheds and the Mountainview Subdivision, New Mexico. Proceedings, Rocky Mountain Ground Water Conference, Albuquerque, N.M., October 27-29, 1993.

McQuillan, D. and N. Keller. 1992. Ground-Water Contamination and Remediation in New Mexico: 1927-1992. Proceedings, New Mexico Conference on the Environment, Albuquerque, N.M., September 13-15, 1992, pp 44-53.

McQuillan, D.M., M.J. Jasper and B.H. Swanson. 1989. Ground-Water Contamination by Septic-Tank Use: A Field Study in the Albuquerque South Valley-West Mesa Region, Bernalillo County, N.M. NMED Open-File Report EID/GWB-89/2, 37 p.

McQuillan, D.M. 1989. Ground-Water Quality Impacts of Septic-Tank Use. NMED Open-File Report EID/GWB-89/1, 10 p.

McQuillan, D., D.M. Doremus and B. Swanson. 1988. Hydrogeologic Investigation of the Carnue-Deadman's Curve Site, Tijeras Canyon, Bernalillo County, New Mexico. NMED Open File Report EID/GWB-88/2, 22 p.

McQuillan, D.M. and N.S. Keller. 1988. Ground Water Contamination in New Mexico, 1927-1986. Proceedings, 32nd Annual New Mexico Water Conference, pp. 12-33.

Gallaher, B.M., D.M. McQuillan, L.D. Chavez, L.D. Hull and M. Eidson. 1987. Ground-Water Quality and Public Health, Albuquerque South Valley. NMED Open-File Report EID/GWH-87/1, 240 p.

Thomson, B.M and D.M. McQuillan. 1984. Nitrate Contamination of Ground Water in Albuquerque. In N.M. Bureau of Mines and Mineral Resources, Hydrologic Report 7, pp. 204-216.

McQuillan, D.M. 1984. Water Quality Concerns in the Albuquerque South Valley. NMED Open-File Report EID/GWH-84/2, 18 p.

McQuillan, D.M. 1983. Ground Water Quality in the South Valley of Albuquerque. In N.M. Water Resources Research Institute, Report 169, pp. 48-59.

McQuillan, D.M. 1982. Pollution of the Rio Grande Valley-Fill Aquifer. In *Albuquerque Country II*, N.M. Geological Society Thirty-Third Annual Field Conference, pp. 357-360.